BELS
ALABAMA BOARD FOR ENGINEERS & LAND SURVEYORS

SECOND QUARTER
2019 EDITION

BELS BULLETIN

3 THINGS TO READ

NEED A SPEAKER?

If your university, firm or organization would benefit from a presentation by BELS, we would be happy to join you. Our presentations cover different topics:

- Our identity
- Ethics
- Continuing education (PDH)
- The investigative process
- ACT 550 / Law Change
- Pathways to Licensure

Please contact Public Information Specialist Griffin Pritchard to make your request. He can be reached via email at: griffin.pritchard@bels.alabama.gov or via phone at 334-242-5568

BELS Bulletin is a publication of the Alabama Board of Licensure for Professional Engineers and Land Surveyors. Digital editions will be posted on our website and linked on our social media pages. To subscribe, email griffin.pritchard@bels.alabama.gov

Students from Elmore and Montgomery counties and throughout the Wiregrass traveled to Troy University March 11 as part of the GEODay experience to learn about land surveying.

Surveying the Future

Troy University hosts GEODay to address Surveyor shortfall

By Griffin Pritchard |
BELS Public Information Specialist

More than 300 high school students descended upon Troy University in March looking to learn about the land surveying profession. The students – from high schools in Elmore and Montgomery counties and throughout the Wiregrass – learned the history of the profession and then the many different facets and tools used to successfully take measurements of the earth.

GEODay – as it was billed – served as an opportunity for Troy University's Geomatics Sciences programs to introduce itself and the profession to students who may not yet have made a decision upon where they are going to college. The topics ranged from Drones to GPS and 3D Laser Scanning; of which was demonstrated in realtime as part of the presentation.

"I believe it's important to talk to students and people about what our typical day and week might be," Rusty Blackwell, President of the Alabama Society of Professional Land Surveyors said. "I like showing them that we have different 'offices.' One 'office' might be the typical office setting and the other 'office' might be outdoors. Surveyors use some of the latest technology and I don't know if many people realize that. By showing the different aspects of surveying in a setting like GEODay, they can experience that."

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GEODAY

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Blackwell added: "Any given week we might start off in the county courthouse researching information on a boundary survey we are working on. The next day we might be in the field working on a boundary survey and another day we might be testifying in court or on a construction site assisting a contractor by performing construction staking."

While presenting to high schoolers the need for and the importance of the land surveying profession, the message was simply: "For years people have needed to know where things are and where to put things like houses and cities."

This profession is one that dates back thousands of years and is an intricate part of American history as three of the four Founding Fathers chiseled into Mount Rushmore were Land Surveyors; Teddy Roosevelt was the odd man out.

"The old measurements are so accurate that the Pyramids are a fraction of a degree off from True North," said ASPLS representative Tony Manary. "They are that close from being in perfect line with one another."

Feet and inches don't change. The ways professionals go about measuring them and the levels of information gleaned from those measures grows from decade to decade.

"I believe not all people want to work in a cubicle all day and for those who don't, land surveying might be the profession for them," Blackwell said.

"Having other speakers and presenters like our equipment vendors show the technology surveyors use every day helps students understand and see the tools we use and the information they can provide."

GEODay classes were around 25 minutes each and utilized different buildings throughout Troy University's campus with the event beginning and ending in the theatre at Crosby Hall.

"Lack of awareness of surveying and geomatics is the largest recruitment problem that the profession faces," wrote Troy's Steve Ramroop after consulting the University's Geospacial Informatics Department.

"Without massive efforts to overcome this problem, all recruitment efforts can only chip away at the edges or reach people already aware of our existence. Helping students from nearby high schools to have a better understating of the program through face-to-face conversations with faculty members and future employers can help promote the program and the profession in the long run. Students, teachers and parents can see the possibilities for careers that our programs prepare students to enter. It also gives them practice knowledge about our careers."

The event also served as an opportunity to address the shortfall within the land surveying profession as the number of professional land surveyors licensed to do work in Alabama is hovering around 1,100.

"One of the best ways to address the need for land surveyors in the state or even in the nation is to tell people what we do," Ramroop added.

Over the course of the one-day event, students were able to learn the different facets of surveying that allows the professionals to work outside the office. Students learned about Drones uses as well as the benefits of LIDAR and GPS.

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our CONTACTS

100 N. Union Street
Suite 382
Montgomery, Ala. 36104
334-242-5568
bels.alabama.gov

our MISSION

The Alabama Board of Licensure for Professional Engineers and Land Surveyors was established by legislative action in 1935. Its charter is to protect the public by helping to safeguard life, health, and property, and to promote the public welfare by providing for the licensing and regulation of persons in the practices of engineering and land surveying. This purpose is achieved through the establishment of minimum qualifications for entry into the professions of engineering and land surveying, through the adoption of rules defining and delineating unlawful or unethical conduct, and through swift and effective discipline for those individuals or entities who violate the applicable laws or rules.

HANDBOOK FOR BUILDING OFFICIALS

In a joint effort between BELS and the Board of Architects - and with the input of the State Fire Marshal's Office - Alabama Code Officials now have the ability to download a copy of the 2019 handbook. The updated publication can be found on both the BELS website (www.bels.alabama.gov) and the BOA's website (boa.alabama.gov) and will be distributed at different COAA (Code Officials of Alabama Association) events throughout the state beginning with the state conference in May.

The 2019 Handbook - the first update in 10 years - refreshes and renews language regarding the different laws and codes, as well as provides checklists and new information to better serve as a reference guide for code officials and building inspectors.

2019 Handbook for Alabama Building Officials

GEODAY

From Page 2

Troy professor and Geomatics Head Steve Ramroop guides students through a presentation at the end of the first GEODay event hosted by Troy University's Geospacial Informatics and ASPLS.

"All the speakers and their supporting teams did a great job presenting and demonstrating their advanced technologies such as drones, 3D scanning, GIS, Mobile LiDAR. These fascinating data, projects and work involved in their surveying and geomatics projects attracted a lot of attention from these young high school students."

While the 2019 and inaugural version of the event was a success – drawing 340 students from a few counties – organizers and ASPLS members are already working on ways to make the 2020 version better.

"I hope in 2020 that number increases or even doubles," said Blackwell of the attendance.

"I currently live in North Alabama and one thing I hope we can offer is a GEODay or something like that to the students from the middle part of the state to the northern part of the state, maybe Birmingham to Huntsville."

The organizers also looked at the event from a presentation standpoint: What are the students getting out of attending aside from a day out of school.

"From the ASPLS / Land Surveying side, I believe we need to continue to tweak our sessions and presentations to keep the students engaged. I know for myself, a professional land surveyor and not a public speaker, I need to work on improving that aspect. That being said, I am passionate about the Land Surveying profession and want to see it continue to grow and succeed and GEODay is one way for that to happen."

GREYSCALE

Area of Expertise

"In sealing drawings of several disciplines the licensee jeopardizes his own license by potentially violating competency requirements ... This is not a new problem but is one that has been brought to our attention recently via a complaint."

Marc Barter

Professional Engineer

Board backs Code Officials who question engineers "area of expertise"

At the last board meeting a discussion was held regarding the practice of a single licensee placing their seal on documents of more than one discipline of engineering. Alabama's law provides for a professional engineers license, mandating that licensees practice within their area of expertise. The process of becoming licensed requires that the individual demonstrate this expertise through submission of the appropriate education credentials, successfully passing both a Fundamentals and a Principles of Practice exam in the discipline of their choosing, and the accumulation of experience in their chosen discipline of engineering.

After the appropriate education is attained, the P.E. exam is passed, and the four years of experience is accumulated, the individual is licensed to practice engineering as a professional engineer. Most licensees understand their limitations and only seal documents within their chosen field of practice.

Unfortunately, too many people, through their actions, are indicating that they can practice more than one discipline.

Building officials notice this in their review of construction documents submitted for permitting and have approached the Board for guidance.

Absent a formal complaint being filed, the Board is powerless to investigate. Unfortunately, unless someone challenges the multitalented engineer, the public could be put at risk; which is not a good situation. I don't think we want chemical engineers practicing civil engineering based on that the fact that both disciplines begin with a "C" or mechanical engineers practicing electrical because the HVAC systems they design run on electricity. And…., we surely do not want aeronautical engineers practicing structural engineering because airplanes have frames and buildings do too. The disastrous (Brevard County, Florida) Harbor Cay Condo project demonstrated the flaw in that line of thinking (11 killed, 23 injured).

In sealing drawings of several disciplines the licensee jeopardizes his own license by potentially violating competency requirements. We see this happen many times when a multidiscipline firm from outside the state decides that having one person licensed in Alabama checks the box on legally practicing.

This is not a new problem but it is one that has been brought to our attention recently via a complaint.

Building officials and agencies tasked with reviewing construction documents are the first line of defense against incompetent practice and in the case of plan stamping, unethical behavior. The board has decided to provide these agencies with the necessary assistance they need to check this practice.

In the future, if you seal documents in more than one discipline, you may very well receive a letter requesting documentation supporting your claim of competency in those disciplines. Education, both at the undergraduate and graduate level is evidence as well as continuing education, and the P.E. exam you passed when you became licensed.

Claiming expertise in two unrelated fields of engineering is

See **Expertise** PAGE 5

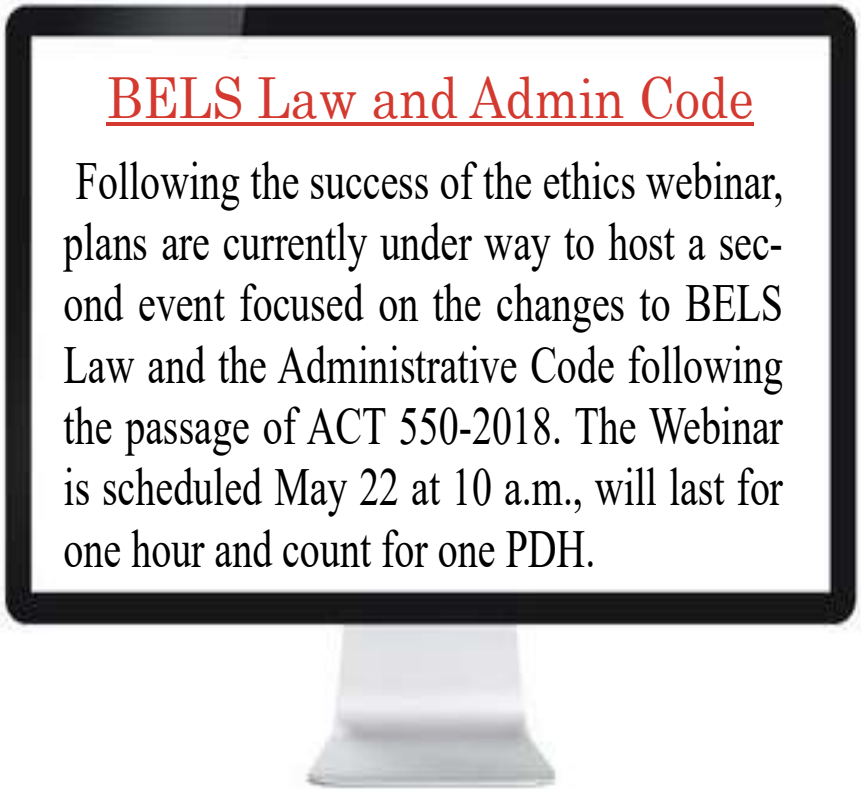
our UPCOMING EVENTS

BELS Special Investigators Bob Herbert and Bruce Thornell have been invited to teach a course at the Alabama Fire College in April and May.

BELS Public Info Specialist Griffin Pritchard will travel to Mobile May 5-6 to take part in the annual Information Marketplace hosted by the League of Municipalities

The Board of Engineers and Land Surveyors is set to hold scheduled meetings May 7 and July 16 inside the Boardroom in the BELS office located in Montgomery beginning at 8 a.m.

upcoming LEARNING OPPORTUNITIES



EXPERTISE

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sure to get noticed.

Sage advice: answer the letter in a timely manner and, if warranted, and given the opportunity, correct your mistake. Alternatively, if you are truly qualified to practice two disciplines, make your case. The law is on your side, but only if you are truly qualified.

There are many engineers, albeit possibly a little long in the tooth, who have the education and the experience to practice related disciplines. When I graduated from college my coursework at the bachelor's level educated me to practice civil as well as structural engineering, which I did in a limited amount early in my career. With the reduction in the credits required for the baccalaureate and the expansion of the building codes, it is unlikely that many people can sustain the knowledge in two specialties. It is a challenge to do so in one.

Therefore the obvious conclusion when an engineer's seal appears on more than one discipline's construction documents, is it's plan stamping.

The board is determined to stop this practice and support other agencies' efforts in assuring the public that the seal on the documents used in the construction of their project is that of a competent individual. To this end the board will be providing assistance and, in some cases, encouraging the filing of complaints when warranted. The best way to avoid being the subject of a complaint, seal only work you are competent to practice and that you were responsible for, and answer any inquiry when you seal the work of more than one discipline promptly.

Enforcement Actions

BELS MEETING: JANUARY 15

2018-03-C: Rick Woods - Unlicensed Practice

An investigation determined Rick Woods, of the firm Woods & Associates Fabrication Company, made changes to the requirements of the original engineer design for a project by placing upsized beams and allowing the torch enlargement of bolt holes without consulting the engineer of record for the project. By making those changes Mr. Woods performed engineering services without employing a licensed professional engineer and obtaining a certificate of authorization.

Mr. Woods agreed to a Consent Order that required him to cease and desist the offer or the providing of engineering services in the State of Alabama until he becomes an Alabama licensed professional engineer, to pay $225 to the Board for the cost of the investigation, to pay a $1,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

2018-05-C: Jeremy Bandre - Unlicensed Practice

An investigation determined Jeremy Bandre of the firm Alabama Alarm Inc., entered into an agreement with a restaurant to design and install a new residential burglar/fire alarm system, without employing an Alabama licensed professional engineer and obtaining a certificate of authorization for the firm.

Mr. Bandre agreed to a Consent Order that required him to cease and desist the offer or the providing of engineering services in the State of Alabama until he becomes an Alabama licensed professional engineer, to pay $250 to the Board for the cost of the investigation, to pay a $1,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

2018-08-B: Todd B. Caton, P.E.

An Investigation determined that in late 2015 Mr. Todd B. Caton, professional engineer, entered into an arrangement with Ralph S. Hakel that allowed Mr. Hakel to obtain jobs, perform field work and other services related to soil percolation (PERC) tests. In the arrangement Mr. Caton agreed that Mr. Hakel would receive 70 percent, and he would receive 30 percent of the monies for the work. Mr. Caton did not meet with the clients, and the documents submitted by Mr. Hakel to local health departments contained Mr. Caton's signature and professional engineer seal, along with the firm name "Septic Solutions" as providing the services listed on the CEP 2/3 forms.

The firm, Professional Septic Solutions, does not hold a certificate of authorization issued by the Board that would authorize it to offer or provide engineering services in the state of Alabama.

Mr. Caton agreed to a consent order that required Professional Septic Solutions to cease and desist the offer or the providing of engineering services in the State of Alabama until it obtains a certificate of authorization from the Board, to pay a fine of $3,000 to the Board, his license to practice engineering to be suspended for one year with that suspension stayed, and the Consent Order and Final Order to be public records.

2018-31-C: Keith Carter - Unlicensed Practice

The investigation determined that Keith Carter of the firm Hiller Fire Protection, entered into an agreement with CDI / Munford Head Start, to install a Fire Alarm system.

During the installation of the system the firm made design and installation modifications to the engineering design without consulting the Alabama licensed professional engineer supervising the project.

Mr. Carter agreed to a Consent Order that required the firm to cease and desist the offer or the providing of engineering services in the State of Alabama until it employs an Alabama licensed professional engineer and obtains a certificate of authorization, to pay $200 to the Board for the cost of the investigation, to pay a $2,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

See **Enforcement Actions** PAGES 7

our NEW LICENSEES

Listed on pages 7 and 8 are the names of the most recent Professional Engineer, Professional Land Surveyor licensees who have been granted licensure following BELS January and March meetings.

• PE LICENSEES

AARON BLAKE HEBERT
AARON RAY FRAHM
ABBY L. THURMAN
ADAM JAY SNIFF
ADAM MICHAEL MARICKOVICH
ANDREW MICHAEL LANSDELL
ANDREW MICHAEL MCKEEVER
APRIL SHARP HINSON
ARIAN CALA
AUSTIN RYAN PIERCE
BARRETT CAMERON CROOK
BENJAMIN EARLE ENTREKIN
BRADLEY WADE FOUST
BRANDON KEITH SCHARN
BRANDON LEE CAMP
BRENT AUSTIN BOYD
BRENT MATTHEW ZERN
BRETT DEXTER
BRITTON L. LUTHER
CADY HOBSON STEWART
CARLOS FABIAN BENAVENTE
CARMELO EMMANUEL AYALA AGOSTO
CASPER JAY WYNN
CATHERINE RENEE BARNES
CHAD XAVIER SLATER
CHANGJIANG SHEN
CHARLES JOSEPH OLSEN
CHARLES K. FIEDLER
CHARLES LEE THARP III
CHRISTOPHE ALLEN LAMPEL
CHRISTOPHER DOUGLAS ROBERTS
COLTON KYLE PALMER
COREY ANDREW SHOOP
CRAIG STEPHEN PARKER
DANIEL EGON BERNER CAMPBELL
DANIEL MARK SCHAFRAN
DANIEL MICAH WEINSTEIN
DANIEL MICHAEL DUNN
DANIEL RYAN MCDUFF
DARREN WAYNE EYRE
DAVID ARTHUR THURNHERR
DAVID J. EVERS
DAVID L. GARRETT II

ENFORCEMENT ACTIONS

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2019-02-C: Ann Tieu, P.E.

An investigation determined that Ms. Ann Tieu, professional engineer of the firm T.E. Inc., offered engineering services for numerous construction / remodeling projects of Costco facilities located in Hoover, Huntsville, Montgomery, and Mobile Alabama for a period of over 10 years during which time the firm had not been issued a certificate of authorization for engineering by the Board.

The firm was issued a certificate of authorization for engineering on October 22, 2018. Ms. Tieu agreed to a Consent Order that required the firm to pay $175 to the Board for the cost of the investigation, to pay a $4,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

BELS MEETING: MARCH 5

2019-04-C: Jose L. Parada, P.E.

An investigated determined that Jose L. Parada, professional engineer of the firm Engineers Northwest Inc., P.S., applied for a certificate of authorization to offer engineering services in the State of Alabama that was denied on April 14, 2012, for the firm's failure to report a disciplinary action taken by another State Board on its application.

In December 2014 Mr. Parada submitted signed and sealed design plans for a Costco located at 1450 Tingle Circle West, Mobile, Alabama bearing the firm name Engineers Northwest Inc., P.S. without a certificate of authorization. Mr. Parada agreed to a Consent Order that required the firm to pay $125 to the Board for the cost of the investigation, to pay a $3,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

2019-07-C: Julie Woods - Unlicensed Practice

An investigation determined that Julie Woods of the firm Woods Engineering & Consulting LLC, formed a company with the word "engineering" in its name without obtaining a certificate of authorization for engineering issued by the Board. The firm then conducted business as Woods Engineering & Consulting LLC.

Ms. Woods agreed to a Consent Order that required the firm to cease and desist using the term "engineering" in its name or business materials, to pay $300 to the Board for the cost of the investigation, to pay a $1,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

2019-11-C: Paul C. O'Brien - Unlicensed Practice

An investigation determined that Paul C. O'Brien, professional engineer of the firm GHT Limited Inc., submitted engineering design plans dated September 7, 2018, for the Strayer University Mobile campus project during a time when the firm did not hold a certificate of authorization for engineering. GHT Limited Inc., had previously held a certificate of authorization, however, Mr. O'Brien had submitted a Cancellation form in October 2010 stating the firm was no longer offering engineering services in the State of Alabama. Mr. O'Brien agreed to a Consent Order that required the firm to pay $125 to the Board for the cost of the investigation, to pay a $1,000 civil penalty to the State of Alabama General Fund, and the Consent Order and Final Order to be public records.

our NEW LICENSEES

DAVID MATTHEW SEXTON
DONALD GERARD ARSENAULT-FLACHMEIER
DOUGLAS BARRY MOON
DOUGLAS BYRON HOFFMAN JR
DREW ALEXANDER MEACHAM
EDWARD BORDEN III
ERIC LEE HOFFMAN
ERIC VINCENT MEYERS
ERIN NICHOLE JANACEK
FRANCIS DANIEL HALBEDL
GLENN WILLIAM HARVEY
JACOB ANDREW QUILLEN
JACOB PADEN LEWIS
JAMES DERRICK JOYE II
JAMES EDWARD PRASER
JAMES JOSEPH TATONE II
JAMES LAING CONLEY JR
JAMES MARK OLSON
JAMES PHILLIP HANSEL
JAMEY LEE BROWN
JASON GERALD SANTERS
JASON MICHAEL AINSLIE
JEREMY MICHAEL GASSER
JEROMY KEITH HAINES
JINZE CHEN
JOEL ROBERT GRUBBS
JOHN ANTHONY BAHAM JR
JOHN BURKE BOSCO
JOHN D. YURCHEVICH
JOHN DERRICK JOYE
JOHN WALTER OLEKSIK
JOHN WILLIAM KOSTYO
JOHNATHON DAVID SHORT
JONATHAN CHARLES WHITE
JONATHAN JOSHUA SIGMAN
JONATHAN LEE RASMUSSEN
JONATHAN RANDY EASTERLING
JORGE LUIS CACCIATORE
JORGE O. FLORES-DAVILA JR
JOSE JUAN RIVERA NIEVES
JOSEPH VINCENT MCELVANEY JR
JULIAN COSTA
JULIE LEBER OLIPHANT
JULIUS C. WILLOUGHBY JR
JUSTIN HOSSEININEJAD
JUSTIN DANIEL RUSH
JUSTIN T. V. DIAZ
JUSTIN THOMAS JOHNSON
KARL JEFFREY HANSON
KATHERINE ANNE POTHIER
KATHRYN LEA MCCOY
KEITH ALLAN JOHNSON
KENNETH M. TRUMP
KYLE MCDONOUGH
KYLE JAY WARTA
KYLE WILLIAM MILLEMON
LEWIS JACOB-LYN BERNARD
LOGAN SCOTT CHRISTENSEN
LUKE ANDERSON HASHA
M. DREW RIMMER
M. SCOTT POLIGONE
MANOHAR DATTA
MAREK TOMASZ KOBIALKA
MARK ALAN BRADHAM
MARK ANDERSON TAYLOR
MARK LEE WOODWARD
MATTHEW COUGHLIN
MATTHEW SIPIORSKI
MATTHEW BENJAMIN REGENOLD
MATTHEW C. MALPASS
MATTHEW EDWARD DEEKE
MATTHEW J. HOLLENBECK
MATTHEW THOMAS SELLERS
MATTHEW TIMOTHY CAHIR
MELINE RAE IGLESIAS SMITH
MELQUIADES FELIX GARCIA
MICHAEL DEAN ABBAS
MICHAEL KODJO FYNN
MICHAEL LEE TERRY III
MICHAEL PRENTISS ALEXANDER
MOISES A. CINCO
NATHAN ALAN EASTWAY
NATHAN JEFFREY MILLS
NATHANIEL JEFFREY SPRAGGINS
NICHOLAS CARROLL COX
NICHOLAS JOSEPH CRISPELL
NICHOLAS WAYNE COMFORTER
PAUL BEVERLY FOSSIER JR
PAUL EDWARD PARRY
PETER M. BAXTER
PETER STERLING JACKSON
PETER W. DEMING
RACHEL MARIE HENRY
RAJESH TOLIKONDA
RAMSEY G. SAAB JR
RICHARD EGAN
RICHARD GAETANO MACINO
ROBERT BLAKE SMITH
ROBERT BRYAN REED
ROBERT CHASE BEAN
ROBERT E. BURLE JR
ROBERT HENRY GOOD II
ROBERT PATRICK BAUGHMAN
ROLAND EDWARD MCPHERSON
RONALD DAVID PLOOF
RYAN THOMAS STOKES
SANJAY BABURAO GURAV
SCOTT ROBERT HAYTHORN
SHAWNNA LOUISE ERTER
SONYA VOLCE CEBALLOS
STEPHANIE MARIE SMALLEGAN
STEVEN ARMENDAREZ RYAN
TAKASHI MISHIMA
TEODOR FRANCU
THOMAS MICHAEL KOSANDA
TODD ARTHUR FORD
TREY DANIEL TIDMORE
TYSON JAMES THOMAS
WESTON TREVOR MONTGOMERY
WILLIAM ANDREW COLE
WILLIAM E. PEDERSEN
WILLIAM JASON DEAL
WILLIAM NATHANIEL FELT
WILLIAM THOMAS MARSTON II
WILLIAM WAYNE KESTERSON
WILLY MAX CHEN
YUNXIANG FAN
ZACHARY T. SHEPHERD
ZHENYU CAO

• PLS LICENSEES

ADAM PAUL SCHMEING
JASON DANIEL GIBSON

our NEW INTERNS

• ENGINEER INTERNS

AMY ELIZABETH RAGAN
ASHLEY RENAE GRAHAM
CHRISTIAN NATHANIEL LLOYD
COREY JOSEPH MAISCH
DON GUY V. V. BIESSAN
JAKOB ROBERT KEHOE
JENNIFER LYNN JOHNSON
JEROD DAVID MARTIN
JOHN ALEXANDER ORTIZ
JOSHUA BENJAMIN COLE
JOSHUA RYAN YORK
JUSTIN RYAN GARMANY
KENNETH ANYAELE OGBONNAYA
KIMBERLY BROOKE JANEWAY
LESLI WILLIAMS HARMON
MATTHEW ALAN STROBEL
MATTHEW WILLIAM MANGO
MICHAELA EMILY ERNAND
NOAH KYLE MAXWELL
OLIVIA ANN ELISE ZUVANICH
PAUL ANDREW JACKSON JR
RYAN WILLIAM COONS
STEPHEN ELWOOD DOLLAR
STEPHEN MATTHEW POPTIC
TINOTENDA HAKATA
TREVOR ALAN MCCLANAHAN
WESLEY WYATT VIALL
WILLIAM JACOB OLINGER

• SURVEYOR INTERNS

JOSEPH REID JONES
MATTHEW TATE HERRELL

Meet the newest inductees into the State of Alabama Engineering Hall of Fame. Pictured are: front row) Stan Biddick (accepting the award for the I22 project), Jon Sharpe, Norm Tew and Steve Cook. They are joined by (back row) Carl Register, Zeke Smith, Lowell Christy, Tanya Fratto and Joe Green (accepting for Dorothy Davidson). The group was inducted during a ceremony in February.

Engineering leaders honored with Hall of Fame inductions

By Griffin Pritchard |
BELS Public Information Specialist

The State of Alabama Engineering Hall of Fame had a brush with history during its 2019 induction ceremony in February. Lowell Christy joined her husband Frazier (inducted as part of the 2016 class) when a new group of eight leaders in their respective disciplines were granted entry.

Christy, Stephen Cook, Dorothy Davidson, Tanya Fratto, Carl Register, Jonathan Sharpe, Zeke Smith and Norman Tew comprise the list of individuals honored during the event held inside Birmingham's Ross Bridge Golf Resort.

As customary, a project is also inducted amongst the individuals. This year, Corridor X (the I-22 project) was celebrated. Corridor X is a 202-mile stretch of interstate that connects Byhalia, Mississippi to Birmingham, Alabama. Designated in 2012, the Interstate 22 project is a part of the Appalachian Development Highway System and serves as a connector for portions of rural and small-town Alabama and Mississippi. The roadway connects I240, I55 and I68 via US 78, I269, I65 and I20/I59 (currently undergoing a facelift of its own throughout Birmingham).

The induction ceremony is held annually in February and typically serves as the kickoff to National Engineers Week. The Hall of Fame (housed at the University of Alabama) was formed in 1987 to recognize those individual engineers and companies, and engineering projects that have made a great and lasting impact on the state.

Christy – who, according to her bio, "has broken ground for women in engineering and construction, along the way providing critical support for influential projects around Alabama and the nation," – is a founding partner and former president of Christy/Cobb Inc., where she honed her management skills as the prime design professional and structural engineer for all architectural projects, municipal and industrial facilities. Her client-list reads like a catalogue of owners, state and local government agencies, engineers, architects and contractors. She serves as an ACEC Fellow and is a member of the Associated

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Hall of Fame

From Page 9

General Contractors of Alabama Hall of Fame. She received the 2014 Community Service award from the ACEC College of Fellows. According to her induction information: "Some of Christy's favorite projects include the historic site assessments for Fort Morgan and Wheeler Plantation, the stone restoration and columbarium at the Cathedral Church of the Advent, and the shortwave broadcasting facility for Mother Angelica."

Below are highlights of the 2019 Hall of Fame Class and their induction biographies, additional information can be found at engrhof.org:

Cook: Technical Leader --- "Cook's career has made him part of the roll call of men and women who played critical roles in Alabama's proud history of contributions to space exploration. As the former manager of NASA's Ares Project, Cook oversaw Huntsville's return to its roots as the nation's Rocket City with the development of rockets designed to take humans back to the Moon and, ultimately, to Mars. Now with Dynetics Inc., he continues to support our nation's human space exploration efforts."

Davidson: Technical and Philanthropic Leader – "Dr. Dorothy Davidson's lifelong service to her profession and her dedication to promote STEM education is a testament to her love and passion for the engineering community. As CEO of Davidson Technologies in Huntsville, Davidson leads a company that has distinguished itself in the aerospace and missile defense industry with an outstanding reputation for excellence."

Fratto: Engineering Leader – "After graduating with an Electrical Engineering degree, she joined GE's Manufacturing Management Program. Over the next 30+ years, Tanya's work assignments would take her across the globe and would lead to an officer position in GE, ownership of a company in private equity and a leadership role in a premier Swedish company. Her extensive experience in running companies, strategic planning, general management, sales, marketing and operations allow her to now contribute to the successful oversight and governance of global organizations."

Register: Influential Executive – "With more than 50 years of experience in the construction materials industry, Birmingham native Carl Register has carved out a successful career as an executive running top engineering companies and leading his own innovative engineering ventures. His engineering savvy and business knowledge has not only elevated his companies to new levels of prominence but has also helped shape the industry."

Sharpe: Dedicated Engineer – "In a career dedicated to our nation's civil space and missile defense programs, Jonathan Sharpe developed and implemented innovative solutions to challenging problems, along the way strengthening human spaceflight capabilities and contributing to improved national and allied security."

Smith: Prominent Alabamian – "As Executive Vice President of Alabama Power External Affairs, Smith is responsible for Charitable Giving, Environmental Affairs, Governmental and Corporate Affairs, Public Relations and Regulatory Affairs. In this role and others, he is an advocate for the people of Alabama, a respected leader in the state's engineering and business community and committed to improving his company and the state."

Tew: Defending the Homeland – "Tew has devoted his career to engineering systems that defend the United States and advance strategic objectives abroad. His work has spanned more than 36 years in defensive weapon systems development, including system architecture and requirements definition, system and product design, performance evaluation, systems integration, system testing and operational fielding."

The State of Alabama Engineering Hall of Fame was founded by proclamation of Governor Guy Hunt in 1987 to honor and recognize "the outstanding accomplishments and contributions of individuals, projects and corporations/institutions that have brought and continue to bring significant recognition to the State of Alabama."

The event was hosted by Iwan Alexander (UAB's Dean of Engineering, pictured above left) and also by Master of Ceremonies Gary April (Secretary / Treasurer for the Hall). Over the course of the night, the two led the audience in recognizing the successes of the inductees.

While the Department of Material Science and Engineering may be one of the smaller programs inside UAB's School of Engineering, the students who are involved have the opportunity to get hands-on with the process and create materials used on everything from golf clubs to airplane wings.
The students pictured are currently using a molding machine found inside the lab at the Materials Application and Development Center.

Photo courtesy UAB

Engineering creative solutions

UAB Material Science Engineer students gain hands-on experience

By Griffin Pritchard |
BELS Public Information Specialist

Engineers are a unique breed. If the part or tool or modification needed to complete a task hasn't been created yet, they can rectify that situation. That design-on-the-fly mentality is best witnessed in the Materials Applications and Development Center (MPAD for short) inside the School of Engineering at UAB. Grant Martin, director of communications for the UAB School of Engineering, pointed out that MSE (Material Science Engineering) Department students have designed tornado plates for houses in Montgomery and a new method for treating elephants with damaged tusks.

"What does a materials engineer do," Martin asked rhetorically. "In a sense, everything."

According to the U.S. Bureau of Labor Statistics, there are around 27,000 Materials Engineers in the work force since 2016 and that number is projected to rise by two percent over the next 10 years.

Martin added that metals and composites are used in everything from construction to transportation and that Materials Engineers are always looking for way to develop "stronger, lighter and cheaper materials…from tornado-proof interior walls to buses to tank armor…to just about anything."

Don't think these professionals work only on the large scale, Material Engineers also design golf clubs, baseball bats and have been working on a safer football helmet to reduce concussions.

"Materials are at the heart of all other engineering disciplines," wrote UAB Department of Materials Science and Engineering Chair Selvum Pillay. "Whether an engineer is designing bridges over water-treatment systems, or medical devices, they utilize materials that are constantly being developed, evaluated and

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LEARNING LAB

Students participating in UAB's Material Science Engineer program have the opportunity to gain a hands-on education.

One of the key aspects is the forge where students are able to test the strength and properties of different metals heated until molten.

The visuals from having a molten forge is also a selling-point for the small disciplines as part of its marketing program. Commercials highlighting the different aspects of the school can be found on YouTube and Facebook.

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improved. It's an incredibly diverse discipline, in terms of the nearly limitless fields where you can apply your knowledge."

Pillay added: "The MSE undergraduate program typically graduates 20-25 students per year. Our graduates are employed by just about every industrial sector, including automotive, mass transit, consumer goods, manufacturing, mining, medical, federal agencies and labs. Any product from food to clothing to spacecrafts always starts with a material and will need materials engineers to create it."

According to UAB's MPAD website: "The increasing demand for low-cost composites in various applications such as aerospace, transport, mass transit, automotive, energy, military, sporting goods and commodity markets is accompanied by the need for developing innovative and newer material forms and processing technologies. There is high potential for low-cost, very lightweight composites as proven through applications developed by the UAB MPAD center a range of applications."

IEEE (The Institute of Electrical and Electronics Engineers) on their website, tryengineering.org, a conglomeration of different skillsets can be combined to create the perfect Materials Engineer. The skills – analytics, math skills, functional problem-solving, the ability to communicate clearly and lastly, being able to write clearly – can be developed through the college years.

While a litany of different disciplines combine to form the engineering field, material engineers are a small but productive group. In the discipline, they work on projects related to other fields of engineering. They have to understand the different disciplines, the components needed to bring their collections to life and just how those creations needed to be crafted to withstand different conditions.

"As a general rule, engineers learn by doing," Pillay said. "We give them the background they need in fundamentals, but they develop as engineers when they are able to apply that knowledge themselves. Undergraduates work in our various labs and facilities such as the MPAD under close faculty supervision, and they become increasingly independent as their research matures through senior design and graduate studies."

On top of all that, they must be able to state and write their concepts and ideas clearly while working with other engineers from different disciplines and technicians without an engineering background can understand what the goal is and how the end-product should look and function.

"Hands-on, experiential learning is at the heart of what we do at both the undergraduate and the graduate level," Pillay said. "Undergraduates begin working on simple design projects their freshman year, and all students are required to participate in a senior design project prior to graduation. The senior design students work alongside other engineering disciplines. The elephant tusk and the tornado panels are classic examples of the involvement of students in our program; these projects involved undergraduates, and graduate students supervised by faculty members."

The tornado panels Pillay referenced were created following the string of tornados in 2011 that claimed multiple lives in western Alabama. According to a press release, the panels were created using thermoplastic and fiberglass and weighs 80 percent less than the steel used in many current shelters, and are created within FEMA standards to withstand wins upwards of 250 MPH. The panels are "built to remain intact even if the house was destroyed during a storm, keeping the occupants safe."

Installation followed months of testing, approval and manufacturing with the goal of turning any room in the house into a safehaven.

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Working in the Material Scienses lab at UAB, future engineers are able to create and test different compounds and materials that could become beneficial in the future. Students have developed a tusk for an elephant at the Birmingham Zoo and have also designed tornado panels for a test home in Montgomery.

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"The professors do a great job of teaching the fundamentals of materials, such as are they developed and why materials propogate specific properties," said undergraduate MSE student Sarah McCrory. "This allows us to understand conceptually what it takes to create certain materials, but the hands-on experiences are what connects the science and industry relations. Sometimes, in order for concepts to click, you need to see the process or complete a lab to see its application yourself. For example, in our casting class, we learn about designing a process necessary to achieve a good cast, but in lab, we put the process to the test by making the pattern, building the mold and pouring the molten metal."

Pillay added that students in the MPAD program are "encouraged to participate in professional chapters," and by doing that have also become quite successful entering and winning myriad competitions focusing on metal castings, plastic, composites and ceramics.

The same material used to create the tornado panels can be found on some newer military vehicles and was also used to stymie an elephant tusk from cracking further. The crack in the tusk, according to Pillay, is as painful to pachyderms as cavities are to human mouths.

"Working with the [Birmingham] Zoo to innovate and create something that serves to benefit animals has been tremendously rewarding to our team of researchers and students," Pillay said. "For our students, specifically, it's opening their eyes to how diverse the engineering industry can be."

McCrory – like her professors – feel that students are set up for success.

"Most professors here want you to do well and are willing to help you if you approach them with questions," McCrory said. "By doing these things, I feel that you can figure out what you want to study and excel in what you are interested in."

For additional information about the MPAD or UAB's Material Sciences Engineering Department, visit their website: https://www.uab.edu/engineering/mse/mpad.

FUTURE CITY COMPETITION

Middle schoolers from throughout Alabama (and one group from Arkansas) made their way to the U.S. Space and Rocket Center to take part in the annual Future City Regional Competition.

The event, a staple for years, brings teams of 6-9th graders together and tasks them with creating a community strong enough to withstand a natural disaster. They must also be creative with the design and utilize a budget of $100.

Student teams - after creating their cities - were judged on everything from project planning to the layout of community to innovative ways they addressed issues. City planners, professional engineers and professional land surveyors were amongst those invited to judge.

BELS was actively involved as a partner this year and Griffin Pritchard presented the Best Project Plan Award to the students from Straughn (Alabama) Middle School.